

The opinion in support of the decision being entered
today was not written for publication and is
not binding precedent of the Board

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HIDEAKI FUKUZAWA, SHIN-ICHI NAKAMURA,
YUZO KAMIGUCHI, HITOSHI IWASAKI
AKIO HORI and SUSUMU HASHIMOTO

MAILED

APR 18 2003

Appeal No. 2001-1954
Application 08/940,020

PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

ON BRIEF

Before THOMAS, JERRY SMITH, and RUGGIERO, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellants have appealed to the Board from the examiner's final rejection of claims 21-23, 26, 47, 48, 60-65, 67-75, 77 and 78.

Representative claim 21 is reproduced below:

21. A magnetoresistance effect device, comprising:

a substrate having a main surface;

a magnetoresistance effect film formed on the main surface of said substrate and having a magnetic field detecting portion;

Appeal No. 2001-1954
Application 08/940,020

a pair of bias magnetic field applying films disposed adjacent to both edge portions of the magnetic field detecting portion, the bias magnetic field applying films having hard magnetic films containing Co as a structural element and having a bi-crystal structure.

The following references are relied on by the examiner:

Krounbi et al. (Krounbi)	5,018,037	May 21, 1991
Chen et al. (Chen)	5,733,370	Mar. 31, 1998
		(filing date Jan. 16, 1996)

Claims 60, 67 and 77 stand rejected under the enablement provision of the first paragraph of 35 U.S.C. § 112. Claims 21-23, 26, 47, 48, 60-65, 67-75, 77 and 78 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon Krounbi in view of Chen.

Rather than repeat the positions of the appellants and the examiner, reference is made to the briefs and the answer for the respective details thereof.

OPINION

We turn first to the rejection of claims 60, 67 and 77 under the enablement provision of the first paragraph of 35 U.S.C. § 112.

If the examiner had a reasonable basis for questioning the sufficiency of the disclosure, the burden shifted to the appellants to come forward with evidence to rebut this challenge.

Appeal No. 2001-1954
Application 08/940,020

In re Doyle, 482 F.2d 1385, 1392, 179 USPQ 227, 232-33 (CCPA 1973), cert. denied, 416 U.S. 925 (1974); In re Brown, 477 F.2d 946, 950, 177 USPQ 691, 694 (CCPA 1973); and In re Ghiron, 442 F.2d 985, 992, 169 USPQ 723, 728 (CCPA 1971). However, the burden was initially upon the examiner to establish a reasonable basis for questioning the adequacy of the disclosure. In re Angstadt, 537 F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976); and In re Armbruster, 512 F.2d 676, 678, 185 USPQ 152, 154 (CCPA 1975).

As to this enablement issue, the specification of the patent must teach those skilled in the art how to make and use the claimed invention without undue experimentation. Genentech, Inc. v. Novo Nordisk A/S, 108 F.3d 1361, 1365, 42 USPQ2d 1001, 1004 (Fed. Cir.), cert. denied, 118 S.Ct. 397 (1997). This same case indicates that the scope of the claims must bear a reasonable correlation to the scope of enablement provided by the disclosure.

Among claims 60, 67 and 77, the examiner asserts that the commonly claimed "an underlayer having a thickness of 50 nm or less" recited in each of these claims includes every thickness down to zero. The examiner asserts that the specification fails to enable the artisan how to make and/or use an underlayer

having a thickness approaching zero. Answer, page 3. The examiner repeats this basic rationale in the responsive arguments portion of the answer at pages 6-8.

For their part, appellants assert at pages 6 and 7 of the principal brief on appeal that because a relatively large number of patents have been allowed, according to appellants' determinations, with claims that use the language "less than," appellants have effectively argued that their use of the corresponding term in the noted claims renders their specification enabling under the first paragraph of 35 U.S.C. § 112. We are unpersuaded by this line of reasoning which is essentially repeated at pages 2 and 3 of the reply brief. The mere use of the terms "less than" in other patents does not necessarily mean or imply that appellants' specification here is enabling as to the respectively claimed feature. We are thus of the view that the examiner has set forth, in accordance with the above-noted case law, a reasonable basis to question the adequacy of the disclosure in the presently claimed invention as to claims 60, 67 and 77 which has not been successfully rebutted by appellants.

Appellants even go so far as to note at the top of page 3 of the reply brief that for "any range having only one end point, such a range would generally be undefined either at zero or at infinity." This line of reasoning also does not argue for patentability of the present claims on appeal, but in fact appears to us to buttress the examiner's reasoning. Throughout the noted pages of the brief and reply brief, appellants have not attempted in any manner to prove enablement of the disputed feature according to the actual teachings, suggestions and showings of the drawings and their specification as filed. We are thus in agreement with the examiner's views expressed as to this observation at page 7 of the answer.

From our own independent determination, it appears to us that the feature in dispute is based somewhat on the discussion in the paragraph bridging pages 22 and 23 of the specification as filed. Although this paragraph does indicate that the metal base film 16 and the reactive base film 15 (both comprising thin base film 18 in Figure 1) may be 50 nm or less, this discussion does indicate that when the film thickness of the base film "is too small, the effect of Co type hard magnetic film 17 cannot be effectively obtained." The end of this noted paragraph states "[t]hus, the total film thickness of the base film 18 is

preferably in the range from 5 to 50 nm." It thus appears to us that the examiner is correct in assessing that the appellants have not contemplated any manner of implementing or enabling the disclosed invention that is presently claimed in disputed claim 60, 67, and 77 at least for film thickness of zero up to 5 nm. Therefore, the decision of the examiner rejecting these claims under the enablement provision of the first paragraph of 35 U.S.C. § 112 is sustained.

On the other hand, we reverse the rejection of all claims on appeal under 35 U.S.C. § 103. We have concluded that the examiner has not set forth a prima facie case of obviousness as stated at pages 4-6 of the answer and as embellished upon beginning in the Response Arguments portion of the answer beginning at page 8.

The examiner's mere assertion that certain features are "considered to have" a certain property as stated at the bottom of page 4 of the answer is misplaced and essentially begs the question since it presents only the examiner's views rather than any evidence from the applied prior art to Krounbi. Furthermore, the examiner asserts that Krounbi is silent as to four separate items listed at the top of page 5 of the answer to include the bi-crystal nature of the hard magnetic film, the upper and lower

shields being magnetic poles, the teaching of a spin valve film and the use of an amorphous underlayer. The examiner continues by asserting that Chen has a bi-crystal structure but inappropriately takes Official Notice as to the other three features.

In order for us to sustain the examiner's rejection under 35 U.S.C. § 103, we would need to resort to speculation or unfounded assumptions to supply deficiencies in the factual basis of the rejections. In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968), reh'g denied, 390 U.S. 1000 (1968). This we decline to do. Here, simply put, more evidence is needed to convince us of the obviousness of the subject matter of the claims on appeal and for the examiner to rely upon official notice for three of the four noted deficiencies of the primary reference relied upon.

Our reviewing court has made it clear in In re Lee, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002), and In re Zurko, 111 F.3d 887, 42 USPQ2d 1476 (Fed. Cir. 1997), that rejections must be supported by substantial evidence in the administrative record and that where the record is lacking in evidence, this Board cannot and should not resort to unsupported speculation. As indicated in Lee, 227 F.3d at 1343-44, 61 USPQ2d at 1433-34, the examiner's finding of whether there is a teaching, motivation or suggestion to combine the teachings of the applied references

must not be resolved based on "subjective belief and unknown authority," but must be "based on objective evidence of record."

Although we reverse the rejection of all claims on appeal under 35 U.S.C. § 103, we make the following observations from our study of appellants' admitted prior art at specification pages 1-9 and the prior art relied upon by the examiner. Page 1 of the specification indicates that a spin valve film was known in the art to be a part of MR or magnetoresistance effect devices. These devices include magnetic heads. They have a giant magnetoresistance effect (GMR) as noted at the top of page 2. A solution to the known prior art problem of Barkhausen noise is explained beginning at page 2 of the specification as filed is to use a cobalt-based hard magnetic film. Known films as in association with prior art Figures 36 and 37 exhibit a property of "a large residual magnetization Mr" as noted at the top of page 3. Significantly, as to the examiner's reliance upon Chen as a reference that relates to the minimization of magnetic recording medium noise, appellants' own specification begins a discussion at the bottom of page 6 that random access memory devices having a spin valve film have been studied. It is noted that to accomplish a low noise feature in such devices the use of a hard magnetic film having a bi-crystal structure was noted at the bottom of page 8 of the admitted prior art portion of the specification as filed to yield a low noise "medium." This is

substantially what Chen teaches. [Significantly, however, the analogousness of both magnetic heads and magnetic mediums using this bi-crystal structure was admitted by appellants to be in the prior art anyway.] Moreover, it is stated at the top of page 9 at the end of appellants' assessment of the prior art that such a bi-crystal structure "base film should have a bcc (body-centered cubic) (200) orientation. In the bcc structure, normally a plane (110) is the densest plane." This apparent prior art property is also noted by appellants and utilized in their disclosed invention for film 17 as indicated at the bottom of page 22 of the specification as filed. Certain claimed features of the claims on appeal relate to all this admitted prior art.

We also note that the paragraph bridging columns 1 and 2 of Chen indicates that it was known in the art of the fabrication of thin film magnetic mediums using cobalt-based alloys that they may be formed on an amorphous underlayer or substrate-like surface. The crystallographic orientation of 200 is specifically taught in this reference, thus also apparently suggesting the claimed feature as admitted by the prior art at page 9 of the specification as filed, the 110 orientation. The essence of Chen is the ability to minimize medium noise based upon a suitable microstructure control as indicated at column 1, lines 31 and 32 of Chen. Chen does not however teach any specific ranges of thickness of a prior art or known amorphous layer or underlayer.

Even the examiner's reliance upon the "magnetic recording handbook" reveals significant teachings and suggestions as well. The topic 5.2 at page 360 is noted by the examiner but its full teaching value has not been fully appreciated since it relates to recording "channels," the noise of which may be derived from in part reproduce-head noise as well as recording medium noise. As to the combinability of Krounbi and Chen, this teaching suggests an analogousness at the outset. Furthermore, the examiner's notation of the third paragraph at page 364 of this handbook relating to the polycrystalline nature of eliminating head noise in part is significant because it relates directly to the teaching value of Chen, particularly its background discussion at columns 1 and 2. The latter portions of this noted paragraph indicate that the prior art problem of Barkhausen noise may be reduced by careful micromagnetic design, again suggesting the teaching value of Chen.

Because the examiner has failed to establish a persuasive evidentiary record in the stated rejection by relying inappropriately on Official Notice to provide substantive evidence of unpatentability within 35 U.S.C. § 103, the examiner has failed to set forth a prima facie case of obviousness. Even though we have noted certain portions of appellants' admitted prior art and other teachings and suggestions of the applied prior art and the evidence provided by the examiner of Official

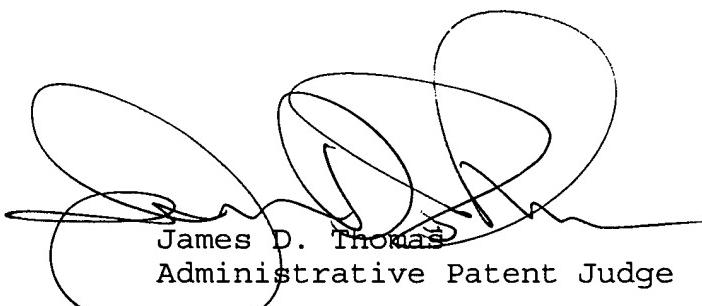
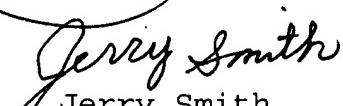
Notice, there is clearly substantial evidence of record that the examiner has not even relied upon in formulating the rejection. Therefore, we remand this application to the examiner for consideration of making reformulated rejections on the noted prior art and portions of the admitted prior art in the initial pages of the specification as filed. The examiner is also free to choose to rely upon additional or different prior art not of record in the formulation of any subsequent rejections within 35 U.S.C. § 103.

In summary, we have sustained the rejection of claims 60, 67 and 77 under the enablement provision of the first paragraph of 35 U.S.C. § 112. On the other hand, we have reversed the rejection of all claims on appeal under 35 U.S.C. § 103 and remanded this application to the examiner for consideration of the introduction of rejections based on a solid evidentiary basis. Thus, the decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

It is important that the Board of Patent Appeals and Interferences be informed promptly of any action affecting the status of the appeal (i.e., abandonment, issue, reopening prosecution).

AFFIRMED-IN-PART/REMANDED


James D. Thomas)
Administrative Patent Judge)
)

Jerry Smith)
Administrative Patent Judge)
)

Joseph F. Ruggiero)
Administrative Patent Judge)
)

) BOARD OF PATENT
APPEALS AND
INTERFERENCES

JDT/cam

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER
1300 I Street, N.W.
Washington, DC 20005-3315